

IN THE DRAWINGS

Please substitute the enclosed corrected drawing, Sheet 4/4, in the above-referenced patent application. Applicants have corrected Fig. 7 of the application in accordance with the comments set forth by the Examiner. The corrected figure is enclosed herewith in compliance with 37 C.F.R. 1.121(d).

REMARKS

In the Office Action, claims 36-65 were rejected. By the present Response, claims 36, 41-44, and 60-62 are amended, and claims 38, 47 and 58 are cancelled. No new claims are added. Upon entry of the amendments, claims 36, 37, 39-46 and 49-65 will remain pending in the present patent application. Reconsideration and allowance of all pending claims are requested.

Priority

As requested by the Examiner, Applicants have amended the specification to include a reference to a prior-filed application in compliance with 37 CFR 1.78(a). Applicants further note that on September 15, 2003, i.e., the filing date of the present application, the Applicants filed a Request for Filing a Divisional Application under 37 C.F.R. § 1.53(b) in which the prior-filed application was referenced. *See* attached exhibit A. The amendment was apparently overlooked by the Office. In view of this, Applicants stress that a reference to the parent application was filed by Applicants in a timely manner. Accordingly, Applicants have appropriately claimed benefit from the prior-filed application without having to incur any additional costs pertaining to this matter.

Specification

The abstract of the application, as originally submitted, contained 155 words. The Applicants have amended the abstract so that the total number of words does not exceed 150 words.

Applicants have amended the specification in accordance with the Examiner's remarks except on page 13, line 17, where usage of the word "total" is maintained by the Applicants. Applicants submit that, indeed, it is the *total* amount of the many readings which gives rise to the Accumulated Absolute value. *See*, Application, page 13, lines 15-19. A *total* number of readings is used so that large numbers of sampled signals may be

achieved providing reliable comparisons that distinguish among various types of objects contacting the sensors. *See* Application, page 10, lines 25-30.

Further, Applicants have cancelled claims 47 and 48, and amended claims 60 and 62 in accordance with the comments by the Examiner.

Objection to the Drawings

Applicants have corrected Fig. 7 of the application in accordance with the comments set forth by the Examiner. The corrected figure is attached herein in compliance with 37 CFR 1.121(d).

Claim Rejections under 35 U.S.C. § 112, First Paragraph

In the Office Action the Examiner rejected claims 36-65 under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. Applicants traverse the rejection.

Legal Precedent

First, regarding the written description requirement, the initial burden of proof regarding the sufficiency of the written description falls on the Examiner. Accordingly, the Examiner must present evidence or reasons why persons skilled in the art would not recognize a description of the claimed subject matter in the applicant's disclosure. *In re Wertheim*, 541 F.2d 257, 262, 191 U.S.P.Q. 90, 96 (CCPA 1976). The Examiner is also reminded that the written description requirement does not require the claims to recite the same terminology used in the disclosure. The patentee may be his own lexicographer. *Ellipse Corp. v. Ford Motor Co.*, 171 U.S.P.Q. 513 (7th Cir. 1971), *aff'd*. 613 F.2d 775 (7th Cir. 1979), *cert. denied*, 446 U.S. 939 (1980). Moreover, any information contained in any part of the application as filed, including the specification, claims and drawings, may be added to other portions of the application without introducing new matter. Accordingly, if an application as originally filed contains a claim disclosing material not

disclosed in the remainder of the specification, the applicant may amend the specification to include the claimed subject matter. *In re Benno*, 768 F.2d 1340, 226 U.S.P.Q. 683 (Fed. Cir. 1985).

Second, regarding the enablement requirement, the Examiner has the initial burden to establish a *reasonable basis* to question the enablement provided for the claimed invention. *In re Wright*, 999 F.2d 1557, 1562, 27 U.S.P.Q.2d 1510, 1513 (Fed. Cir. 1993). The test for enablement, as set forth by the Supreme Court, is whether the experimentation needed to practice the invention is undue or unreasonable? *Mineral Separation v. Hyde*, 242 U.S. 261, 270 (1916). A patent need not teach, and preferably omits, what is well known in the art. *In re Buchner*, 929 F.2d 660, 661, 18 U.S.P.Q.2d 1331, 1332 (Fed. Cir. 1991). The *undue experimentation* test essentially evaluates whether one of reasonable skill in the art can make or use the invention from the disclosures in the patent coupled with information known in the art without undue experimentation. *U.S. v. Telectronics, Inc.*, 857 F.2d 778, 785, 8 U.S.P.Q.2d 1217, 1223 (Fed. Cir. 1988). As long as the specification discloses at least one method for making and using the claimed invention that bears a *reasonable correlation* to the entire scope of the claim, then the enablement requirement of section 112 is satisfied. *In re Fisher*, 427 F.2d 833, 839, 166 U.S.P.Q. 18, 24 (C.C.P.A. 1970).

Claims 36, 49, 54, 59 and 62 should be construed with particular reference to Figs. 5 and 6.

Applicants submit that independent claims 36, 49, 54, 59, and 62 should be construed in view of Figs. 5 and 6 of the Application. Accordingly, Applicants contend that when read in light of these figures the aforementioned claims and those dependent therefrom are completely enabled. For example, independent claim 36 recites “comparing the *input signal values* to at least one *region of signal values* corresponding to anticipated values of the input signals derived from anticipated variations of the input signals.” Hence, the input signal values recited by the claim corresponds to pad-to-earth

(PE) and pad-to-pad (PP) readings used to define decision planes. *See*, Application, page 12, lines 13, 14; *see also*, FIG. 5. More specifically, the specifications states that:

the boxes 80 are drawn to indicate plus or minus three standard deviations in the estimate of the mean. Such conditions provide approximately 99.7 % confidence that the true mean is within the area defined by the respective box. The size of the boxes 80, dimensions 82 and 84, thus are linked to sample size and statistical certainty.

Application, page 12, lines 18-23.

The region of signal values recited by the claim to which readings PE and PP are compared is a threshold, clearly stated by the specification and clearly shown via various comparisons made along various decision junctions in Fig. 6. *See*, Application, page 14, lines 22-28. Hence, given certain criteria defined by parameters having a certain range of values, which may be defined by their mean and standard deviation, a comparison to a threshold enables determining whether a pad is touched or not. Thus, the specification fully supports the claim, as would be appreciated by one having ordinary skill in the art.

Further, independent claim 49 recites “at least one *combination of ranges* of signal values corresponding to anticipated regions of values of the input signals.” (Emphasis added). Similarly, independent claims 54, 59 and 62 recite “at least one *predetermined combination* of regions of signal values.” (Emphasis added). These claims effectively recite a threshold used to compare signal readings to determine output states of the system. As discussed with reference to claim 36, Figs. 5 and 6 and their disclosure in the specification also pertains to claims 54, 59 and 62. These figures and the corresponding disclosure detail the manner by which comparisons to thresholds are made and how those are used to determine output states of a system. *See*, Application, pages 12-17; *see also* Figs. 5 and 6. Accordingly, Applicants submit that the subject matter recited by claims 49, 54, 59 and 62 is further described in the specification.

For at least these reasons, the rejection of claims 36, 49, 54, 59 and 62 under Section 112, first paragraph should be withdrawn. Applicants request reconsideration and allowance of these claims, as well as claims dependent therefrom.

Dependent Claims 41 and 42 are Amended

Newly amended dependent claim 41 recites “the switching system cannot be placed in the ON state until an input exceeds a preset threshold value.” As clearly shown by Fig. 6, once in a FAULT state the system may be placed in the ON state only after a threshold value has been exceeded. Accordingly, claim 41 is fully supported by the Application. *See*, Application, Fig 6.

Similarly, newly amended claim 42 recites that “a NOISY” state is determined when noise in the input signal value is determined to be high. Accordingly, this would correspond to a noise level exceeding a threshold, as clearly shown by Fig. 6. Thus, claim 42 is fully supported by the specification. *See*, Application, Fig. 6.

For at least these reasons the rejection of claims 36-65 under Section 112, first paragraph, should be withdrawn. Applicants request reconsideration and allowance of claims 36-65.

Claim Rejections under 35 U.S.C. § 112, Second Paragraph

In the Office Action the Examiner rejected claims 43 and 44 under 35 U.S.C. § 112, second paragraph, as being indicative for failing to particularly point out and distinctly claim the subject matter which applicant regards as this invention. Applicants traverse the rejection.

Legal Precedent

Although the Examiner may take exception to the terms used in the claims, the patentee may be his own lexicographer. *Ellipse Corp. v. Ford Motor Co.*, 171 U.S.P.Q. 513 (7th Cir. 1971), *aff'd*. 613 F.2d 775 (7th Cir. 1979), *cert. denied*, 446 U.S. 939 (1980). The Examiner is also reminded not to equate breadth of a claim with indefiniteness. *In re Miller*, 441 F.2d 689, 169 U.S.P.Q. 597 (CCPA 1971).

Claims 43 and 44 are Amended

Claims 43 and 44 recite a “limit” existing between the ON state and the FAULT state. Applicants submit that a limit could be set by a threshold. Thus, when sample readings exceed the threshold the system transitions to a FAULT state. That is, the threshold determines the limit the sample readings must reach before the system “knows” when it should be placed in the FAULT state. In responding to remarks set forth by the Examiner regarding the lack of a mathematical formula for determining any such limits or boundaries, Applicants submit that a limit or a threshold can be determined via empirical methods or other experimental means, not requiring any sophisticated mathematical methods or formulas (e.g., implemented via a simple equation for a line or curve, or by a look up table, or even a simple numerical comparison). Such is well within the abilities of those skilled in the art, given the descriptions of the application. Moreover, those skilled in the art would doubtless be apprised of the scope of the claims and the protection accorded given the language now present in the claims. The claims are simply not made indefinite by use of the term “limit.”

Applicants contend that for at least these reasons the rejection under Section 112, second paragraph is improper and should be withdrawn. Accordingly, Applicants request allowance of claims 43 and 44.

Claim Rejections under 35 U.S.C. § 102

In the Office Action, the Examiner rejected claims 36, 37, 40 and 42 under U.S.C. § 102(e) as anticipated by Harkcom et al., (U.S. Patent No. 6,998,545, hereinafter referred to as “Harkcom”). Applicants respectfully traverse the rejection.

Legal Precedent

Anticipation under section 102 can be found only if a single reference shows exactly what is claimed. *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 227 U.S.P.Q. 773 (Fed. Cir. 1985). For a prior art reference to anticipate under section 102, every element of the claimed invention must be identically shown in a single reference. *In re Bond*, 910 F.2d 831, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990). To maintain a proper rejection under section 102, a single reference must teach each and every limitation of the rejected claim. *Atlas Powder v. E.I. du Pont*, 750 F.2d 1569 (Fed. Cir. 1984). Accordingly, the Applicants need only point to a single element not found in the cited reference to demonstrate that the cited reference fails to anticipate the claimed subject matter. The prior art reference also must show the *identical* invention “*in as complete detail as contained in the ... claim*” to support a *prima facie* case of anticipation. *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 U.S.P.Q. 2d 1913, 1920 (Fed. Cir. 1989).

Newly amended independent claim 36 recites a method for comparing input signal values to at least one region of signal values “wherein the input signal values are *redundantly* compared” to anticipated values. (Emphasis added). Redundantly comparing input signals to anticipated values is used as a mean for *reliably* evaluating the noise level of the system and for determining an appropriate state of an output signal produced by the system. (Emphasis added). See, Application, page 7, lines 20-24, page 10, line 28- page 11, line 2.

In contrast, Harkcom does not disclose a method of comparing input signals in a touch sensor such that the input signal is “*redundantly* compared” to anticipated values, as recited by claim 36. Much less does Harkcom teaches such a method for reliably determining noise levels present in a touch/proximity sensor and/ or determining a state of an output signal produced by the system.

Accordingly, the prior art reference used to reject the claim does not anticipate claim 36 because the cited reference does not disclose each and every element recited by the claim. Therefore, Applicants request the Examiner to withdraw the rejection under Section 102 and allow claim 36 and claims dependent therefrom.

Applicants note that no other prior art rejections were formulated by the Examiner. Accordingly, all claims are believed to in condition for allowance.

Conclusion

In view of the remarks and amendments set forth above, Applicants respectfully request allowance of the pending claims. If the Examiner believes that a telephonic interview will help speed this application toward issuance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

Date: 5/9/2006

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:
Michael Lee Gasperi et al.

Prior Application Serial No.: 10/396,055
Prior Application Filed: March 25, 2003

Serial No.: Unassigned

Filed: Herewith

For: METHOD AND APPARATUS FOR
DETERMINING A SWITCHING SIGNAL
STATE
(Formerly: METHOD AND APPARATUS
FOR PROVIDING A SWITCHING SIGNAL
IN THE PRESENCE OF NOISE)


Group Art Unit: Unassigned

Examiner: Unassigned

Atty Docket: 02AB146-A/YOD
ALBR:0132-1

EL 982235530US

Mail Stop Patent Application
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

"EXPRESS MAIL" MAILING LABEL	
NUMBER:	EL 982 235 530 US
DATE OF DEPOSIT:	September 15, 2003
<p><i>Pursuant to 37 C.F.R. § 1.10, I hereby certify that I am personally depositing this paper or fee with the U.S. Postal Service, "Express Mail Post Office to Addressee" service on the date indicated above in a sealed envelope (a) having the above-numbered Express Mail label and sufficient postage affixed, and (b) addressed to the Commissioner for Patents, Mail Stop Patent Application, P.O. Box 1450, Alexandria, VA 22313-1450.</i></p>	
September 15, 2003 Date	 Lynda Fitzwell

Dear Sir:

REQUEST FOR FILING DIVISIONAL APPLICATION UNDER 37 C.F.R. § 1.53(b)

This is a Request for filing a divisional application under 37 C.F.R. § 1.53(b) of pending prior application Serial No. 10/396,055, filed on March 25, 2003, entitled **METHOD AND APPARATUS FOR DETERMINING A SWITCHING SIGNAL STATE** in the name of Michael Lee Gasperi et al..

The following are enclosed:

1. X Papers which the undersigned declares to be a true copy of the prior application as originally filed, including a Title page, a 18 page disclosure, 7 pages of claims, a 1 page abstract of the disclosure, 4 sheets of formal drawings, and a Declaration & Power of Attorney signed by the inventor.
2. X The Commissioner is authorized to charge the filing fee as calculated below, less any claims canceled by amendment below, and any additional fees which may be required, to Rockwell Deposit Account No. 01-0857, Order No. 02AB146-A/YOD.
- 3.a. A copy of the Election and Power of Attorney in the prior application.
or
- 3.b. A new Power of Attorney.
4. X An Assignment of record for the prior application.
5. X Three (3) sets of informal drawings, each set consisting of 4 sheets.

6.a. _____ A verified statement claiming small entity status is enclosed.

or

6.b. _____ A verified statement claiming small entity status was filed in a parent application and small entity status is still proper and desired in this continuing application.

7. X Preliminary Amendment.

 X Please address all correspondence in connection with this application to Alexander Gerasimow, Allen-Bradley Company, 1201 South Second Street, Patent Dept., 704P Floor 8 T29, Milwaukee, WI 53204; telephone (414) 382-2000.

 X Amend the specification by inserting before the first line the sentence:

—This application is a Continuation of application Serial No. 10/396,055 filed March 25, 2003.—

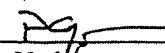
_____ Cancel in this application original claims 0-00 of the prior application before calculating the filing fee. (At least one original independent claim must be retained for filing purposes.)

The filing fee is calculated on the basis of the claims originally filed in the prior application, and any claims canceled by amendment.

CLAIMS	FOR	NUMBER FILED	NUMBER EXTRA	RATE	CALCULATIONS
	TOTAL CLAIMS 30	- 20 =	10	X \$ 18.00	\$ 180.00
	INDEPENDENT CLAIMS 6	- 3 =	3	X \$ 84.00	252.00
	MULTIPLE DEPENDENT CLAIM(S) (If applicable)			+ 280.00	
				BASIC FEE	750.00
				Total of above Calculations =	\$ 1,002.00
	Reduction by 1/2 for filing by small entity (Note 37 C.F.R. §§ 1.9, 1.27, 1.28.				\$
				TOTAL =	\$ 1,002.00

The undersigned declares that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true, and further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: 9/15/2003


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